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ABSTRACT

A Los Angeles bilingual elementary school was evaluated for the effectiveness of its dual reading program for bilingual first graders, the effectiveness of the native language literacy approach for Spanish dominants, and evidence of bias in the Comprehensive Tests of Basic Skills (CTBS). One hundred thirty-one Spanish and English dominant children were assessed with the CTBS in grades 3, 4, 5, and 6 for achievement in English reading during 1975-78. Spanish dominants were divided according to the grade level at which they began a dual reading program: grade 1 (SD-I), grade 2 (SD-II) and grade 3 (SD-III). English dominants (ED) were grouped by ethnicity: Hispanics, Blacks, Native Americans, Asians, and Anglos. The results indicated no apparent advantage or disadvantage for bilingual first grade dual readers. The findings also demonstrated the effectiveness of the native language literacy approach, in that the Spanish dominants in three to four years matched the reading level attained by English dominants in six to seven years. Chi square analyses of each subgroup's CTBS raw scores in relation to the median scores indicated no apparent test bias. (Author)

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ENGLISH READING ACHIEVEMENT IN A BILINGUAL SCHOOL

A THESIS

Presented to the School of Education

California State University, Long Beach

In Partial Fulfillment

of the Requirements for the Degree

Master of Arts

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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IN A BILINGUAL SCHOOL

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¡Qué alegría! ¡Ya se acabó!

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Chapter 1

INTRODUCTION

Throughout the United States, in order to satisfy the Supreme Court's requirement for a "meaningful educational experience" for linguistically and culturally different children (Lau vs. Nicholls, 1974), bilingual-bicultural programs are being initiated to meet the needs of growing immigrant populations such as Hispanics, Asians, and South Pacific peoples. More specifically, districts throughout the state of California are desperately attempting to demonstrate compliance with the Lau decision through the implementation of the Chacon-Moscone Bill (AB 1329).

Bilingual-bicultural programs such as those mandated by state and federal governments typically include the following goals:

1. Oral language development in the primary language
2. Reading instruction in the primary language
3. Oral English language development
4. Reading instruction in English
5. Content area instruction in the primary language
6. Enrichment of the learner's knowledge of his

dual cultural heritage

7. Enhancement of the learner's self-concept (Los Angeles Bilingual Schools Program Guidelines, 1976; Los Angeles Lau Plan, 1978).

As a result of the rapid growth in the number of programs, there is a paramount need for the refinement of the methodology in bilingual education, particularly in the area of teaching reading in English to speakers of English as a second language. For example, in the early stages of the Los Angeles Bilingual Schools Program, children who were identified as bilingual--Spanish or English dominant--received initial reading instruction twice daily, an hour in English and an hour in Spanish. Monolinguals were restricted to reading instruction in only the primary language, since it has been found that introduction to reading before competency in oral language is established is foremost among the factors which adversely affect second language reading ability (Capps, 1970). Therefore, as a child's oral proficiency developed in the second language, reading instruction in that language was begun. Oral proficiency level in the second language was considered as the major criterion for entry into second language reading.

Research in learning has indicated that skill acquisition is also adversely affected when two responses are taught to a single stimulus at the same time. It follows

then, that a child who learns one response to the grapheme "a" in Spanish, might have difficulty acquiring another response to the same symbol in English if the first response has not been fully mastered (Deese & Hulse, 1967). Further research indicates that even though young bilingual children are fluent in two systems of communication and even though they score highly on tests of non-verbal intelligence, they tend to have a lower level of language development than monolingual children of the same age and socioeconomic status (Bowd, 1974). Based on these findings and program experience, new guidelines were established in the Los Angeles Bilingual Schools Program regarding initial reading instruction.

According to the new Los Angeles Guidelines, a Spanish dominant bilingual child will only read the dominant language until two requirements have been satisfied. After decoding in the dominant language has been mastered as indicated by a passing score on Level C of the System for Objectives Based Evaluation for Reading--Espanol (SOBER-Espanol) criterion referenced tests for Spanish reading (Cornejo, 1974), and after the learner has demonstrated ability to speak and comprehend anything which is to be read in the second language as indicated by mastery of 80% of the items on the Moreno criterion referenced test (Moreno CRT) for English language proficiency (Moreno, 1974), an introduction to second language literacy

may begin.

However, the fact that primary language reading takes place prior to reading instruction in English is a subject of controversy. There are individuals, indeed, who argue that primary language reading should not occur at all (Willard von Maltitz, 1970). Many feel that delayed entry into English language reading will put the child at a distinct disadvantage in an English speaking system. Among the doubtful are educators who favor the traditional English as a second language program and/or feel their jobs are threatened by bilingual programs, politicans who represent vested interests opposed to bilingual education, and some parents whose own experience as non-English speakers in an English speaking environment has made them skeptical regarding instruction in a language other than English. Furthermore, the widely publicized, yet highly criticized impact study of the American Institutes for Research (Danoff, 1978) has indicated that children from linguistically different backgrounds in federally funded bilingual programs fare no better than similar children in all-English classrooms. On the other hand, the Santa Fe Evaluation, based on a study of a program and population similar to those reviewed by the AIR study has found evidence contradicting the AIR report (1978).

Finally, close scrutiny of programs financed through

categorical funds such as ESEA Title VII, ESEA Title I, and so on, has led to an increased demand for evaluation or evidence of growth. This demand has been in part satisfied through the use of many different achievement tests such as the Comprehensive Tests of Basic Skills (CTBS), the California Achievements Test (CAT), the Stanford Achievement Test (SAT), etc. Credibility of the findings based on the results of these tests is undermined when one examines the appropriateness of such instruments for the populations under study. Usually the tests are normed on middle class English speaking populations. Naturally the tests reflect the language and the culture of the norming sample. The validity of using norms derived from such samples to measure the growth of minority group and other than English dominant children is highly suspect (Cardenas, 1977; Cervantes, 1974; DeAvila & Havassy, 1974; McKenna, 1977).

Statement of Problem

In light of the rapid growth of bilingual programs, the lack of proven methodology, and the controversy surrounding bilingual education, evidence is needed to

1. determine the effect of initiating a dual reading program to bilingual first graders;
2. determine to what extent progress in reading

English is enhanced or hampered by prior acquisition of decoding skills in the primary language; and

3. determine to what extent an instrument normed on English dominant children is differentially biased for or against English dominant children of different ethnic groups and Spanish dominant bilinguals.

Significance of the Problem

The educational needs of linguistically different children, specifically Mexican-Americans, are enormous. Research has demonstrated that 63.9 percent of Mexican-Americans were below grade level in reading compared to 27.3 percent of Anglo-Americans (Ziemer, 1971). In addition, given an average score of 90-110 on standard intelligence tests, it has been found that only 25 percent of the Mexican-Americans in the schools ever achieve the average, whereas nearly 50 percent of all other children reach the mean score.

In order to meet the needs of linguistically different children, federal and state bilingual-bicultural programs are spending millions of dollars annually. The initial federal budget for bilingual programs in 1974 with the amendments to the Bilingual Education Act (Title VII of the Elementary and Secondary Education Act) was $85 million. That budget has been increased annually to an

all time high in 1978 of $160 million (Cordasco, 1976). The American Institutes for Research study regarding the success of programs financed with federal monies casts considerable doubt upon the success of such programs. Consequently, evidence collected in the present study will provide further information regarding the impact of the Los Angeles federally funded program. Furthermore, data which report the success level of different methodologies will be useful in determining the preferred second language reading approach for bilingual-bicultural programs. The data may be used, for example, to determine guidelines regarding which criteria should be prerequisites to the introduction of second language literacy. Analysis of the data may also indicate whether or not it is more advisable to restrict second language literacy until decoding is mastered in the dominant language.

Finally, "hard" data such as that which will be generated by this study are necessary to quell the controversy regarding the implementation of bilingual programs. Actual student performance statistics are vital to the educational leaders who hope to prove the efficiency and appropriateness of bilingual-bicultural programs.

Definition of Terms

For the purposes of this study, these terms are

defined as follows:

Bilingual

A bilingual is a person who can communicate and comprehend at a conversational level by using the vocabulary and syntax norms of two languages as determined by teacher and instructional aide assessment.

Primary Language

The term refers to the language most often used in the home of the speaker.

Spanish Dominant

The term refers to a person who demonstrates more desire and success at communicating and comprehending in Spanish than in any other language.

English Dominant

The term refers to a person who demonstrates more desire and success at communicating and comprehending in English than in any other language.

Bicultural

An individual is described as bicultural if his or her identity permits him or her to enjoy satisfying relations in two cultural worlds and to identify with aspects such as language, religion, and customs of those cultures (Ramirez & Castaneda, 1974).

Hispanic

A Hispanic is a person who is a newly arrived immigrant from Mexico to the United States or who is born in the United States and descended from paternal and/or maternal Mexican ancestors. The primary language may be either Spanish or English.

Anglo-American

An Anglo-American is any person of Western European heritage who is Caucasian and who shares the cultural and political aspirations and privileges of the Anglo-Saxons and their attitudes and customs. English is their primary language for communication.

Black-American

A Black-American is any Negro person whose primary language is English and whose primary culture is North American.

Asian-American

This term refers to persons of Japanese, Korean, or Chinese origin who have recently immigrated to the United States from their homeland or to persons who were born in the United States and descended from paternal and/or maternal Japanese, Korean, or Chinese ancestors, respectively. The primary language of members of these groups may be Japanese, Korean, or Chinese depending on the

country of origin or English.

Native-American

A Native-American is any person descended from an indigenous group native to the North American continent and now included within the United States. The primary language of such individuals is English.

Dual Reading Program

This term refers to the simultaneous existence of two reading programs for an individual bilingual child. Typically the program will include an hour of Spanish reading instruction and an hour of English reading instruction.

Assumptions and Limitations

In this study it was assumed that all the information contained in the pupils' cumulative records is correct since review of the records was the basis of subject identification and because many teachers may no longer be available for the verification of the data. Secondly, it was assumed that scores earned on the reading portion of the Comprehensive Test of Basic Skills (CTBS) are a fair measure of reading achievement.

Because of the descriptive nature of the study, the following factors are recognized to have a possible un-

controlled effect upon the results:

1. The program and methods under examination are part of an on-going public school environment which does not lend itself to experimental controls;

2. The non-standardized method of language dominance identification in the early stages of the Los Angeles Bilingual Schools Program may have resulted in the misidentification of some pupils; and

3. The period of time necessary for data collection and transiency among the pupils have resulted in small group samples; therefore, it may be difficult to make reliable and valid generalizations based on the data.

Finally, because of the "post hoc" nature of the data collection, it was not possible to establish a comparison group at another school or even within the same school. Cumulative records may not have indicated whether the child had participated in a bilingual-bicultural program nor his dominant language.

Summary

Chapter 1 has outlined the problem area, a need for examination of the methodology and test instruments used in the Los Angeles Bilingual Schools Program. In addition, a brief description of current legislation, of current research findings, of the terms used in this study, and

of the limitations and assumptions underlying this research has been made. The chapters which follow will more fully discuss recent research in the problem areas, describe the design and procedures of the present study, present and analyze the results, and finally, draw conclusions from the findings and make recommendations for future research.

Chapter 2

REVIEW OF THE LITERATURE

Although bilingual education has its roots in the United States' early history, only since the late sixties has it been under critical observation again in this country. Until then, much of the related research was focussed on second language acquisition and second language teaching methodologies. The reader was shown how to develop enough oral language skills in the child so that the child could carry on a conversation; however, even though teaching the child to read was considered the next logical step, no special techniques were recommended. Current research, focussed on the needs of linguistically different learners in bilingual programs and in traditional schools, offers many suggestions for the improvement of programs for these children.

The purpose of this review of the literature is to:

1. explore the history of bilingual education in the United States,

2. outline the advantages of native language literacy for second language learners,

3. discuss the use of normed tests with minority group and language different children, and

4. summarize the evidence produced by recent evaluations of bilingual programs.

Historical Treatment of Bilingual Education in the United States

In recent years, volumes have been written about the historical treatment of linguistic minorities in our nation's schools. This section of the literature review will focus on the roots of bilingual education in the United States and on the effects the traditional programs have had on the education of linguistic minority students. This treatment of the literature should provide the reader with an understanding of the great necessity for alternatives to the traditional approaches that have been tried to educate the United States' language minority children.

During the original constitutional convention in California, the Californio delegates fought for and won the battle for a bilingual constitution and for the guarantee that all laws in the state would also be recorded bilingually (Klotz, 1968). Had these stipulations been enforced before they were rescinded thirty years later, they would have had far reaching effects on the educational system in California.

Cordasco (1976) and Andersson and Boyer (1970) reported the existence of a wide variety of public and paro-

chial bilingual schools in the United States from the period of 1839 through 1917. Bilingual schools, where the primary language was used as a medium of instruction and where English was taught as a subject were fairly common among the Germans, the French, the Spanish, the Scandinavians, and the Dutch.

After the Civil War and during the great migrations from 1880 to 1920, no united effort was made on behalf of the immigrant children, but individual schools and communities, in an attempt to "Americanize (and to Anglicize) their charges" (Cordasco, 1976, p. 32) maintained bilingual schools. Indeed, Cubberley (1976, p. 32) described the role of the school during the period, saying it "was to assimilate and amalgamate" the aliens into American culture. Despite the highly assimilative mood of the day, bilingual schools were still common among the Western, Eastern, and Southern European immigrants. Possibly because of the trend towards the melting pot, the use of the primary language as a medium of instruction declined to the status of a subject only.

Other groups saw the need for special treatment in the schools and fought their battles in court. Negrete (1978) reported that Supreme Court decisions reaffirming the rights of non-English speaking students to school instruction in their own language were won by Native American (Quick Bear v. Leup, 1908), German (Meyer v.

Nebraska, 1923), and Japanese and Korean students (Governor of Hawaii v. Tokushige, 1927).

World War I was the greatest stumbling block to the growth of bilingual education in this country. Recent immigrants, anxious to share the American dream were forced to make a choice: language loyalty or loyalty to the United States? (Fishman, 1966; Willard von Maltitz, 1970). With the rumblings of war in Europe, the new Americans were even more willing to learn English--to demonstrate their new allegiance. Furthermore, the immigration quotas, instituted during 1920 through 1924, virtually terminated the supply of European immigrant children. As a result, most bilingual schools closed their doors; curriculum was taught in English only. A few non-public Franco-American schools lingered on between the two World Wars, and the Japanese and Chinese populations of the West Coast maintained afternoon schools (Kloss, 1976), but in general, by 1925 the American bilingual tradition was on its way out of the picture.

Since the first World War and the concomitant immigration quotas, the bulk of the non-English speaking children in the schools have been Hispanic, primarily of Puerto Rican and Mexican origins (Cordasco, 1976). As pointed out earlier, provisions had been written into law for some of the Spanish speaking population in this country, but ordinarily, the laws were not implemented.

Carter (1970) identified, however, the existence of three types of schools in the Southwest where instruction in Spanish was provided. There were rural public schools in Northern New Mexico and Southern Colorado, dissociated as far as policy was concerned, but united in that all or part of the curriculum was taught in Spanish. Parochial schools in the Lower Rio Grande Valley taught by the Oblate fathers stressed the Spanish values and traditions, but still taught an American curriculum using the primary language as a medium of instruction. Finally, the area around Laredo, Texas, was spotted with little one room so-called "Mexican Dame Schools." Run by women educated in the normal schools of Mexico but uncredentialed in the United States, the parlour schools provided private education for the upwardly mobile Mexican-American from 1900 until the end of World War II. The curriculum was the traditional one of Mexico, typically all in Spanish with English taught as a second language. Because the Mexican curriculum was more advanced than the American system, children at the age of ten or eleven who left the Dame school, entered the public system with an advantage.

There is no documentation available regarding the success of our nation's first bilingual schools; however, many statistics describing the plight of language minority children in the traditional system of education are available. Based on the Survey of Income and Education in 1976,

the National Center for Education Statistics reported in 1978 the following characteristics attributable to language minority children:

In grades five through twelve

1. language minority children who usually speak the non-English language were more than three times as likely as non-language minority children to be two or more grades below grade level.

2. Children of a Spanish language background were twice as likely to be two or more grades below grade level.

Overall, considering the drop-out rate, it was reported that

1. 45% of Hispanics who usually speak Spanish drop out of school compared to 30% of other ethnics who usually speak the non-English language,

2. 15% of Hispanics who usually speak English drop out compared to 10% of other ethnics who usually speak English; whereas

3. only 10% of the pupils of an English language background drop out.

Even more staggering are the census figures presented by Negrete (1978). He reported that only 4.2% of white males and 3.6% of white females have completed less than five years of school, whereas 23% of Mexican-American males and 25.2% of Mexican-American females have completed

less than five years of school.

It is also known that Chicanos and Mexican children are:

1. twice as likely to be in classes for the mentally retarded,

2. required to repeat a grade more than twice as often as Anglos,

3. overrepresented in low ability classes and underrepresented in high ability classes,

4. punished for speaking Spanish in school,

5. characterized as incorrigibles, and so on (Carter, 1970; John & Souberman, 1977; McKenna, 1977; Negrete, 1978). Acknowledgment of these facts has led to a reassessment of public education. It has been asked, what is being done for the linguistically different child? Why is the system not working?

The children themselves have frequently been blamed for their non-success (Litsinger, 1973; Negrete, 1978). Rationalizations for the students' non success include the students' lack of preparation, their deficient motivation, and their unsuitability for academic progress. Most experts agree, however, that the schools must assume at least some of the responsibility for the children's success or failure. Resulting from this belief, state and federal legislation has mandated the institution of special programs for language minority children.

The alternatives to regular classroom instruction for language minority children are nothing more than remedial programs which were usually just "more of the same, but with smaller classes" (Carter, 1970, p. 198). Something really innovative, something like an English-as-a-second-language class was called for.

English as a second language programs grew out of the obvious needs of language different learners. The goal of such programs was to teach the non-English speaking child to speak English (Allen, 1965; Bumpass, 1963; Finocchiaro & Bonomo, 1973; Ziemer, 1971). Curriculum was based on the natural sequence of language learning: listening, speaking, reading, and writing.

The program used to implement the ESL curriculum varied from school to school, depending on the number of students who demonstrated the need for such instruction. In some schools children would be "pulled-out" for all or part of the day; in other situations a teacher would "pull-in" to the regular classroom, thereby eliminating the need to take the child (or children) to another location. Still in other cases, a traveling teacher would visit the school twice or three times weekly (Ziemer, 1971).

Shender (1976) pointed out that even though ESL programs attempted to follow the natural sequence of language learning, the children had to follow the regular English curriculum once they returned to the classroom. Once in

the class again, the logical sequence of language learning was ignored. The effects of this procedure were obvious: children became frustrated and bored, because they did not have enough skills in English to comprehend the curriculum. They did not perform anywhere near grade level in English reading, math, or other content areas.

Ultimately, the children experienced alienation from the school, and as they learned English they experienced alienation from their homes (Willard von Maltitz, 1970; United States Commission on Civil Rights, 1975). Since children in ESL programs were expected to compete in English, a language they were still in the process of acquiring, it was not surprising to find that ESL students contributed to the drop-out and below grade level statistics indicated previously (Litsinger, 1973).

Hope for the language minority children came with the rebirth of bilingual education in 1963 in Dade County, Florida, where a program was established to meet the needs of the rapidly growing Cuban population. A year later, two programs were initiated in Texas, one at the Nye School outside of Laredo, and the other in the San Antonio Independent School District. Within five years of the bilingual renaissance in 1963, the Elementary and Secondary Education Act was amended in 1967 to include Title VII, the Bilingual Education Act (Cordasco, 1976). The emphasis then was to refine the methodology to be used in bilingual

programs.

Literacy for Second Language Learners

To the extent that every individual has a right to public education in the United States, every individual also has the right to literacy. Teaching a child to read is one of the basic goals of any elementary school. Ordinarily, the school has no difficulty designing a program for the child: strengths and weaknesses are diagnosed and a program of instruction is prescribed. The procedure is virtually automatic. However, the prescription for language minority children is not yet automatic, since the methodology for second language literacy is not yet firmly established. This section of the literature review will explore the recent research in an attempt to demonstrate the value of the native language literacy approach for learners of English as a second language.

The native language literacy approach, the teaching of reading in the primary language prior to reading instruction in the second language, capitalizes on the strengths the child brings to school. While the child learns English as a second language, reading is taught in the primary language (Harvey, 1972; O'Brien, 1973). Initial literacy in the primary language is a logical step in the child's linguistic development, since listening and speaking skills

have already been developed.

Assuming the mastery of basic reading readiness skills has been accomplished, Spanish speakers encounter immediate success and pleasure in reading Spanish. Reading becomes a meaningful experience related to the child's language, home, and culture (Thonis, 1976).

Gutierrez (1975, p. 13) wrote that "when the language of the home and of the school are of the same variety, there is no difficulty in the transition from home to school." If the school language is not the same as the home language, not only is the transition difficult, but five to six years of the child's language education at home will have been wasted. Likewise, Feely (1970) stated that to disregard the skills that the child brings to school is wasteful since it sacrifices the possibility of utilizing transfer skills from Spanish to English and the possibility of improving the pupils' morale and self-image.

In support of the native language approach to literacy, Adams and Lerner (1974) indicated that the brain is best suited for language acquisition during the period from birth to puberty. In fact, many language skills not learned before puberty remain deficient for life. Why then, they asked, is so much time spent learning to decode a language the learner does not speak when primary language decoding could be quickly learned? Through the native

language approach, the child could learn to read while aural-oral skills were developing in the second language. Later, the reading skills would transfer from the first language to the second. They concluded,

> There are two powerful reasons for using the child's language and words when teaching him to read. . . one is developmental; the other is motivational. It is the difference between working on a puzzle and working with a human. . . one waits to be assembled; the other joins in the process (p. 36).

A similar point of view was expressed by Faye Bumpass, a noted ESL expert. Bumpass recommended withholding reading in the foreign language until "the reading skill has been developed as an automatic part of the child's response in his native language" (1963, p. 46). Initial reading in the second language should be limited to concepts that have been taught aurally and orally so that reading can take place without conscious thought.

Psychological and sociological effects are manifested if only the second language is read (Christian, 1976). Identification with the family and friends becomes secondary. Ultimately, if there is no literacy in the home language, the individual may be less convinced of the validity of the home language as a language. Furthermore, the individual becomes less convinced of the status of the people who speak the home language. It is no wonder the child has psychological problems and social adjustments. Since the first language is considered second rate, those

who speak the home language are second rate people (Christian, 1976, p. 25).

Many researchers have demonstrated that many of the reading skills that are mastered in the primary language can be easily transferred to reading a second language (Barrera-Vasquez, 1953; Engle, 1953; Hatch, 1974; Modiano, 1968; Osterberg, 1961; Ramos, et. al., 1967; Thonis, 1970; Wise, 1969).

In a now classic study with the Indians of Chiapas, Mexico, Modiano (1968) was able to demonstrate that language minority children read the national language with greater comprehension if they have learned to read their primary language first. Three groups of Highland Indians were enrolled in federal, state, and National Indigenist Institute (INI) schools. Students in INI schools received initial reading instruction in the mother language and students enrolled in federal or state schools received initial instruction in the national language. Tests of reading comprehension in the national language indicated that children who had first learned to read in their mother tongue read with greater comprehension than did those who received all instruction in the national language. No specific proficiency level in oral Spanish was required before the introduction of literacy skills took place, although students were expected to master the primer texts in the vernacular be-

for Spanish language literacy was begun.

Additional evidence demonstrating the success of the native language literacy approach was provided by results of the Iloilo Experiment in the Philippines (Ramos, et. al., 1967). An experimental group of Hiligaynon dominant children received primary language reading instruction in grades one and two and English as a second language instruction. Regardless of their success in Hiligaynon reading, instruction in English literacy was begun in grade three and continued through grade six. The control group received all instruction in English. Children were assessed prior to their assignment to the experimental or control groups, and then after each grade through grade six.

At the end of the study, 82 subjects, matched for socio-economic status, school quality, chronological age, and school attendance, remained. After one year, the experimental group scored significantly higher on reading tests in the language of instruction. At the end of two years of English instruction for the experimental group and at the end of four for the control group, the controls demonstrated non-significant superiority in reading English. Two years later, the experimentals were slightly superior to the controls in reading.

The Rizal study, also in the Philippines, was designed to determine the most appropriate time to intro-

duce reading in English, and the time most appropriate for introducing English as a medium of instruction (Ramos, et. al., 1967). Five groups were defined according to the grade level of the children at the time of introduction of English literacy (grade 1 or 2) and at the time of the introduction of English as a medium of instruction (grade 1, 3 or 5). The findings indicated no difference in results related to the time English literacy began; however, the use of English as a medium of instruction did have significant effects. The longer the period of time the child received instruction in English, the better the achievement on tests of English competence.

In an evaluation of the Iloilo Project and the Modiano study, Venezky (1970) came to the following conclusions:

1. The native language literacy approach had obvious cultural advantages, but so far had not been proven scholastically superior.

2. The only viable alternative to the native language literacy approach was an ESL program where the child learned the language while he was still at an age where he learned language easily. In addition, ESL instruction was based on well established theories and criteria.

3. Native language literacy required the development of a methodology for teaching a language not pre-

viously taught in the United States.

4. Children only lose up to one year of curriculum while learning English as a second language. (Apparently, a loss which Venezky considered insignificant.)

Venezky's response to the studies of the effectiveness of the native language literacy approach relected the inconclusive data available on the subject. His remarks regarding ESL, on the other hand, highlighted the advantages of a well tried pedagogical system, but overlooked the proven drawbacks. Specifically, children generally have taken longer than one year to acquire a second language, and they usually have found themselves at least two years behind their English speaking classmates in achievement.

In a study comparing Anglos, Mexican-Americans, and Blacks on a test of 48 reading objectives, Gutierrez found that the Anglos performed better than Mexican-Americans who had received initial reading instruction in Spanish (1975). The Mexican-Americans, however, did perform better than the Blacks. Gutierrez concluded that the proof of the validity of the native language approach was that "children born and receiving early schooling in Mexico or in another Spanish speaking country generally do better in American schools than Mexican-Americans born here." The weakness of Gutierrez's conclusion was that he

provided no empirical evidence to substantiate his belief.

Since Spanish has such a high grapheme/phoneme correspondence, it is generally recommended to teach the child to read Spanish, then English after the child has truly demonstrated readiness for English reading (Shender, 1976). Herbert (1972) and Shender (1976) however, have reported attempts to initiate dual reading programs for bilingual students. In a study of three elementary schools in Texas, it was found that bilingual first grade children introduced to dual reading programs demonstrated achievement in both Spanish and English. English ability was equal to the ability of the control group at one site, but somewhat below at the other two sites. Herbert attributed the difference to the fact that the controls actually spent more hours a week in English reading instruction, therefore, they had more "practice" time.

Although the evidence in support of the native language literacy approach is inconclusive, no evidence has been found that indicates greater success of any other approach. In addition, the affective value of the native language literacy approach cannot be overlooked. In another comparison of children in a bilingual program, Herbert (1977) found no difference between those bilinguals who began reading instruction in their primary language and the monolingual English speakers. He noted

however, that the bilinguals had learned to read two languages with equal competency and had done so in the same time the monolinguals had taken to learn one language. Moreover, the bilinguals' achievement contributed to their positive self-concepts and maintenance of their native language fluency.

Testing Minority Group and Linguistically Different Learners

The public success or failure of any program usually rests upon children's achievement in the basic skills, reading and mathematics. Commonly, achievement is defined by a standard score on a normed referenced achievement test. To the extent achievement tests are used to evaluate samples similar to the norming population, they are valuable instruments for assessing student progress. On the other hand, tests normed on one population and used to evaluate another are exceedingly dangerous weapons.

This section of the survey of the literature will present a brief overview of the inherent dangers in using standardized instruments with minority group and linguistically different learners.

Standardized tests have been used for years in order to evaluate the success of programs and individuals. As

a matter of fact, the Stanford-Binet IQ test was used to test incoming foreigners at Ellis Island for suitability for immigration. As a result of the testing program, it was found that 87% of the Russians, 83% of the Jews, 80% of the Hungarians, and 79% of the Italians were feeble-minded. Deportations rose 350% in 1913 (McKenna, 1977, p. 35). The fact that all of the individuals were tested in English rather than their primary language was not considered a significant variable in the assessment procedure.

This example illustrates the plight of minority and language different children in the schools. As reported earlier, Mexican-American children are over-represented in classes for the mentally retarded and in classes for children of lower ability. Mercer found that in one California school system 45.3 percent of the children in classes of mentally retarded children were Mexican-American, whereas only 11.0 percent of the total school district population was Mexican-American (1977). This outcome is the direct result of the misuse of standardized tests.

Most tests have been normed on white, middle-class, English speaking children. The predictive ability of tests is limited to the extent the norms are developed on a population similar to the one being tested (Cervantes, 1974). If the norming procedure systematically excludes

or underrepresents children of minority and linguistically different backgrounds, the resulting norms will have little validity for those groups. Moreover, the tests will have a biased effect in favor of the norming population and against the excluded populations.

Another pitfall of standardized tests is cultural bias (Cervantes, 1974; DeAvila & Havassy, 1974; McKenna, 1977; Mercer, 1977). Bias, the result of including items which are based on judgments and conventions peculiar to a specific cultural group, is extremely difficult to eliminate from tests. Cervantes (1974) and Mercer (1977) both reported that attempts to translate instruments frequently met with failure, since meaning was lost in the translation. DeAvila and Havassy (1974), similarly reported that translations were not adequate facsimiles since

> a. regional differences within a language make it difficult to use a single translation; and
> b. monolingual translations are inappropriate because the language familiar to non-English speaking children is often a combination of two languages (p. 72).

Greater success at eliminating bias has been obtained by giving more weight to performance or non-verbal portions of tests rather than the verbal sections. In intelligence testing, it has been found that Mexican-Americans scored on the average 7.6 to 11.6 points higher when this procedure was followed (Mercer, 1977, p. 9).

Another problem with standardized tests is that most are not designed to reflect the objectives of the local curriculum. McKenna contended that most standardized tests were composed of unimportant or irrelevant content, items which tested recall rather than analytical or generalizing ability, language that was not common to other world activities, and vocabularies and illustrations that were unfamiliar to non-middle class children. Taylor (1977) even went so far as to suggest that most items from standardized tests represented an Alice-in-Wonderland-Through-the-Looking-Glass approach to reality. He illustrated his point by asking the reader to examine test items, not for the right answer, but for

a. the logic and reality of the question itself,
b. the number of different ways it can be interpreted by children from a variety of backgrounds,
c. the number of given multiple-choice answers that could be correct; and
d. the number of times the child must look out for a trick, a trap, or a simple mistake by the test maker (p. 40).

In the realm of achievement testing, research has shown that tests of reading ability normed on large urban and rural middle class English speaking populations can be reliable instruments for the evaluation of bilingual-biliterate children. Arnold (1969, p. 345) found that both the Inter-American English Reading and the Metropolitan Achievement Tests were "quite reliable when applied to. . .

disadvantaged bilingual children."

Nevertheless, until more data is available to substantiate Arnold's findings, it is recommended that alternatives such as those suggested by Cervantes (1974) and McKenna (1977) be employed in order to evaluate minority group children. The alternatives include the use of

1. criterion-referenced tests which reflect the local curriculum;
2. culture fair tests;
3. a balanced research and program methodology;
4. sensitive interpretation of standardized test data when the use of such test is unavoidable;
5. local norms whenever possible if standardized tests must be used; and
6. the development of culture specific and dialect-appropriate measures.

Recent Evaluations of Bilingual Programs

Like any innovative teaching methodology, bilingual education has been required to prove its worth. However, unlike other innovations, bilingual education is a politically hot item; it threatens the very foundation of American education, English as the language of instruction (Gaardner, 1975; Shender, 1976; Willard von Maltitz, 1975). According to critics, bilingual education has the potential

to divide the nation along linguistic boundaries. Many fear that bilingualism even has detrimental effects on intelligence.

Because of these attitudes towards bilingual education and the mandates written into law, it is important that careful evaluation of existing bilingual programs take place. In this final section of the literature review, special attention will be given to the recent American Institutes for Research (AIR) study of ESEA Title VII Bilingual Education Programs, to the various reactions to the AIR report, and finally to evaluations of other ESEA Title VII programs.

The American Institutes for Research was contracted by the U. S. Office of Education in order to assess the impact of federally funded bilingual programs in the United States implemented during 1975-76. The goals of the study were to (1) determine the cognitive and affective impact of ESEA Title VII programs, (2) describe the educational processes operating in these projects, (3) identify educational practices which result in greater gains in student achievement, and (4) determine per student costs per project (Danoff, 1978).

A cross section of thirty-eight Spanish/English projects throughout the country were selected for evaluation. All projects were in their fourth or fifth year of funding, and were therefore, thought to be "mature" in

their methodology and procedures. A stratified random sample across sites and grade levels representing over 50% of the total enrollment in the projects was chosen for participation in the study.

Students, assessed for language skills by their teachers (about 50% of whom were not bilingual), were assigned to one of the following categories:

1. English dominant, monolingual
2. English dominant, bilingual
3. Spanish dominant, bilingual
4. Spanish dominant, monolingual.

Each student was tested in the areas of English oral comprehension and reading, mathematics, and Spanish oral language and reading in the fall and spring of the 1975-76 academic year.

According to the findings, only about one third of the students in the Title VII programs was of non or limited English speaking ability, although most of the Hispanic students in the program were performing at about the 20th percentile in English reading at all grade levels as measured by the Comprehensive Tests of Basic Skills (CTBS).

Title VII students, compared with non-Title VII students generally performed worse than non-Title VII students in English reading at all grades and about the same as the non-Title VII students in mathematics. Title VII students showed a pre to post test gain on the Spanish reading test.

The reaction to these findings has been phenomenal. Throughout the country people are asking why so much money is being spent on bilingual education if it does not provide any advantage for the students in the program.

The AIR study itself, however, has been the target of the greatest criticism. Among the most outspoken opponents to the report are former Study participants including the former Associate Director, M. Beatriz Arias. Arias and most other critics have focussed on the following methodological difficulties in the study:

1. Language assessment of students by teachers who were not bilingual themselves;

2. the classification of students who were actually non-English speakers as limited English speakers;

3. the non-standard selection of non-Title VII comparison groups which more than likely included students who had also participated in Title VII programs;

4. the selection of comparison groups from outside the districts included in the Title VII programs under study;

5. measurement of English reading ability were taken on non-English speakers or students just learning to speak English;

6. the use of total reading scores on the CTBS even though some students were missing subtest scores;

7. an interim between pre and post test admin-

istration of only five months in nearly 50% of the cases; and

8. at least 49.6% of the teachers in the bilingual programs were not bilingual

(Arias, et. al., 1977; Cardenas, 1977; Gray, 1977).

In short, the quality of the AIR findings were summarized by the following statement from the Center for Applied Linguistics:

> On the basis of this report, one is unable to decide to what extent the inadequacies of bilingual education are an artifact of measurement error, evidence of inherent limitations in production possibilities, a result of implementation problems, the result of slippage between treatment and goals, or the product of premature assessment (p. 1).

In other words, the AIR report, the study upon which the Congress is likely to make many of its decisions on future funding for federal bilingual programs, is a very poorly designed evaluation of ESEA Title VII bilingual programs.

Quality evaluations such as the longitudinal study of the Title VII Bilingual Program in Santa Fe, New Mexico, have provided contradictory evidence to the AIR report (Longitudinal Study, 1977). In a study comparing bilingual treatment groups of students enrolled continuously in the program only during a single given year, and to a control group within the same district, the following results were found:

1. The Title VII students showed increasing

ability in English language skills over time.

2. The Title VII students outperformed the non Title VII students in reading and mathematics in the majority of cases over time.

3. The Title VII students surpassed and/or matched national norms in reading and mathematics.

In another Title VII evaluation, the reading scores of sixth graders in the four totally bilingual schools of the Los Angeles Title VII Bilingual Schools Program in 1971 were compared to the schools' sixth graders' reading scores in 1977 (Los Angeles Unified School District, 1977). The results indicated that there was a mean percentile increase in every case, ranging from a minimum of 9 percentile ranks to a maximum of 17 percentile ranks. Furthermore, Title VII students compared to Los Angeles Title I students demonstrated superior English reading scores at grades one through five. No difference was found at the sixth grade level.

The findings from the Sante Fe and Los Angeles studies demonstrated that children in bilingual programs have achieved success in the areas of English reading and mathematics. These results, along with findings from other program evaluations and empirical research should provide the evidence necessary to refute poorly drawn conclusions such as those contained in the AIR report.

Summary

Bilingual education is not a phenomenon new to the educational system of the United States. It is a methodology which has been retained by various ethnic groups in order to preserve their respective cultures, religions, and languages. Because of social and political pressures of the early 1920's through the early 1960's, bilingual education remained dormant during that period.

Growing needs of minority groups children stimulated the reappearance of bilingual education in the 60's. The new challenge at the time, however, was to refine the methodology. Research has indicated the logic and success of teaching children initial reading skills in their primary language. Nevertheless, evidence in this area is still inconclusive. There is a need, therefore, to define the success and extent of transfer of reading skills from Spanish to English. Furthermore, evidence is needed to demonstrate at which point literacy in the second language should take place; that is, should major importance for transition criteria be given to the child's reading skill in the primary language, should it be given to proficiency in oral English, or should it be a combination of both factors?

It has also been shown that there is a potential danger in using standardized instruments with minority

group students. Evidence has indicated that some normed instruments, on the other hand, can be used reliably with bilingual disadvantaged children. The recommendations resulting from these findings are that suitable alternatives to standardized testing should be used whenever possible; if an alternative is not feasible, the utilization of local norms or a sensitive interpretation of the national norms is suggested.

Finally, data drawn from Title VII programs has illustrated contradictory evidence in the field of bilingual education. Before any conclusions describing the worth of the methodology can be made based on empirical data, it is necessary to refine the evaluation procedures.

Chapter 3

METHODS AND PROCEDURES

The purpose of this study was to examine the following null hypotheses regarding the Los Angeles Bilingual Schools Program model at Second Street Elementary School:

1. There is no significant difference between the mean English reading scores of Spanish dominant bilingual/bicultural children who began a dual reading program in first grade and their English dominant peers who began English reading in first grade;

2. There is no significant difference between the mean English reading scores of Spanish dominant bilingual/bicultural children who mastered decoding skills in Spanish prior to the acquisition of reading skills in English and the mean English reading scores of their English dominant peers who read only English; and

3. There is no significant relationship between language dominancy controlled for ethnicity and reading achievement as measured by the Comprehensive Tests of Basic Skills (CTBS).

Design of the Study

Reading achievement data, defined as total reading scores on the CTBS, was collected for each of the 131 students participating in the study. A difference of the means test (T-test) was computed for the mean scores for total groups and their subgroups. In addition, the relationship between language dominancy for students grouped according to ethnicity and reading achievement was determined through the application of a Chi-squared analysis of the data.

Methodology

Beginning in the Spring of 1975, the CTBS was administered by classroom teachers to each student enrolled in an English reading program at Second Street Elementary School. Each subsequent Spring, through 1978, as the children advanced through the grade levels, the testing procedure was repeated. Results of total raw scores in reading were entered into the children's cumulative records following the administration of each test. Totals were computed only for those children who completed all subtests included in the reading battery. The level of the test administered was appropriate to the grade level being tested as indicated by the chart below.

Grade	Level of CTBS
3	1
4	1
5	2
6	2

Subjects

All subjects were selected from the student body of Second Street Elementary School in Boyle Heights in East Los Angeles. Second Street was selected for study because of its participation in the federally funded Title VII Los Angeles Bilingual Schools Program. It is a school with an approximate enrollment of 700 students, all of whom participate in the bilingual program voluntarily. Parents who do not wish for their children to participate in the program have the option of enrolling the children in a neighboring school.

When the bilingual program began in 1970, all of the school's kindergarten and first grade classes became staffed with fluent bilingual teachers and aides. Teachers were required to pass the Los Angeles Unified School District's fluency test in Spanish and aides were required to take a similar oral test. In 1971, bilingual second grades were added, in 1972 third grades, and so on until

all regular classroom teachers and aides from kindergarten through the sixth grade were bilingual.

A natural outcome of this staffing procedure was an enthusiastic "program" oriented staff who were all hired with the intent of working in a bilingual school, serving the needs of a largely non-English and limited-English speaking community. During their participation in the program, all the teachers and aides received in-service training in order to implement the program methodology.

The average family income of pupils in the school is $6,500 annually. Eighty-five percent of the families live in federal housing projects; the remainder live in apartments, rented homes, or rented rooms. All students qualify for and receive free federal school lunches. Transiency in the school is low, only a 20% rate per year compared to a rate of 25% for the entire district. Eighty-five percent of the school population is Hispanic, ten percent is Black, three percent is Asian, and two percent is comprised of other ethnic groups. The school has the following identified populations of non and limited English speaking students according to the statewide language census of 1978 using the San Diego Observation Assessment Instrument (SDAOI):

1. 537 Spanish dominant
2. 7 Korean dominant
3. 5 Vietnamese dominant

4. 3 Japanese dominant

5. 2 Cantonese dominant

(Los Angeles Unified School District, 1978).

Sample Selection

A total of 131 students was selected from grades three, four, five, and six over the period of three years, 1975 through 1978. Students whose cumulative records indicated that they had been continuously enrolled at the school and consequently in the Title VII bilingual program since the first day of kindergarten were chosen for participation in this study. In addition, children who had been retained in any grade were eliminated from the study, since factors other than linguistic differences would probably have accounted for or contributed to their academic achievement.

Division of Subjects into Subgroups

The sample of 131 subjects was divided into six subgroups according to language dominance and cultural heritage. Bilingual children classified as Spanish dominant were further categorized according to the grade level they were first introduced to English language reading. The following eight subgroups resulted:

Spanish Dominants (SD)

1. Introduced to English reading in first grade--SD-I
2. Introduced to English reading in second grade--SD-II
3. Introduced to English reading in third grade--SD-III

English Dominants (ED)

1. Of Hispanic heritage--EDH
2. Of Black heritage--EDB
3. Of Asian heritage--EDA
4. Of Native American heritage--EDNA
5. Of Anglo heritage--EDAN

The number of subjects included in each of these subgroups is indicated in Table 1.

Language dominance determination was based upon the combined assessment of the teacher and the instructional aide. Evaluation of observations of the child in and outside the classroom; observations of his interaction and language preference with teachers, aides, other adults, and peers; and teacher's interactions with the child's parents resulted in the following categorization of the children's language skills:

1. Spanish dominant, non-English speaking
2. Spanish dominant, limited-English speaking
3. Spanish dominant, bilingual

Table 1

Subgroup Composition

SPANISH DOMINANTS		ENGLISH DOMINANTS	
	N		N
SD I	28	Hispanics	43
SD II	21	Blacks	12
SD III	15	Native Americans	7
		Asians	4
		Anglos	1
Total	64	Total	67

SD + ED = 131

4. English dominant, bilingual

5. English dominant, limited-Spanish speaking

6. English dominant, non-Spanish speaking

Similar categorizations were made for children from other language backgrounds such as Korean and Cantonese.

Determination of cultural heritage was based upon teacher observation and interaction with the children and their families, and/or parents' self identification.

Data Collection

A data card was recorded for each subject chosen for the study. The card contained the child's name, grade, classroom number, date of birth, and ethnicity. Birth data was collected to ascertain that the child had not been retained in any grade for any academic and/or health reasons.

Most importantly, the card contained each subject's CTBS reading achievement raw scores for grades three, four, five, and six. Such data was collected through an examination of the cumulative records. As a result of the collection procedure, it was possible to obtain from one to four scores respective to the respondent's grade level in June of 1978, i.e. one score could have been collected for third graders, two scores for fourth graders, three scores for fifth graders, and four scores for sixth

graders. The subgroup sizes resulting from this procedure have been presented in Table 2. Data collected for all subjects is included in Appendices A and B.

Table 2

Subgroup Samples

ENGLISH DOMINANTS

Ethnicity	Grade Level			
	3	4	5	6
Hispanics	N = 32	N = 26	N = 23	N = 16
Blacks	9	8	7	5
Native Americans	5	5	3	2
Asians	4	3	3	2
Anglos	0	1	1	1
Totals	50	43	37	26

SPANISH DOMINANTS

	Grade Level			
	3	4	5	6
SD I	N = 12	N = 26	N = 23	N = 21
SD II	18	19	11	4
SD III	14	4	2	0
Totals	44	49	36	25

Chapter 4

PRESENTATION AND ANALYSIS OF DATA

This chapter will outline the results of the data collection and analysis as they relate to the null hypotheses presented in Chapter 3. The findings therefore have been divided into three categories:

1. Analysis of the introduction to dual reading in the first grade;

2. Analysis of the introduction to dual reading following the acquisition of decoding skills in Spanish; and

3. Test bias as a function of language dominancy and ethnicity.

Finally, the results will be concluded in the summary section.

Prior to a discussion of the findings, summary statistics including sample sizes, mean raw scores, and standard deviations for the English dominant subgroups and the Spanish dominant subgroups have been presented in Tables 3 and 4, respectively, since categories (1) and (2) above deal primarily with differences in mean raw scores. In addition, grade level equivalents to the mean raw scores have been provided in Tables 5 and 6. Finally,

it should be noted that the single Anglo subject has been eliminated from the statistical analysis since the sample was much too small for any generalizations.

Analysis of the Introduction to Dual Reading in the First Grade

Mean raw CTBS scores of the English dominants subgroups were comapred with the Spanish dominant-I subgroups in order to determine the effect on English reading achievement of introducing a dual reading program in the first grade to Spanish dominant bilinguals.

Separate difference of the means tests (T-tests) were computed by grade level for the aforementioned subgroups. Results for the subgroups comparisons have been reported in Table 7. Significant differences, at levels ranging from probability less than .05 to .001 as indicated, were found at all grade levels when ED-Hispanics were compared to the SD-I subgroup. Comparisons between the other ED subgroups and the SD-I's yielded no significant differences. However, since the cumulative records of the SD-I population indicated the presence of several California State identified gifted pupils, it was suspected that the presence of these students may have had a biased effect in favor of the SD-I subgroup. Therefore, new mean scores (see Table 8) for the SD-I subgroup less the

Table 3

Summary Statistics For the Four Subgroups
of English Dominants' Reading Raw Scores
By Grade

Grade	Hispanic			Black			Native American			Asian			Total		
	N	X	S	N	X	S	N	X	S	N	X	S	N	X	S
Third	32	39.4	15.1	9	47.1	12.6	5	49.2	10.8	4	57.8	19.1	50	43.2	15.7
Fourth	26	37.0	14.1	8	42.3	16.8	5	54.2	15.8	3	59.7	21.7	42	41.7	10.6
Fifth	23	33.1	10.9	7	36.1	17.1	3	43.7	8.4	3	54.0	19.6	36	36.2	14.4
Sixth	16	38.0	12.7	5	45.5	21.2	2	41.0	4.0	2	52.5	24.5	25	40.9	16.2

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Table 4

Summary Statistics For the Three Subgroups of Spanish Dominants' Reading Raw Scores By Grade

Grade	Spanish Dominant I			Spanish Dominant II			Spanish Dominant III			Total		
	N	X	S	N	X	S	N	X	S	N	X	S
Third	12	51.0	14.8	18	37.8	16.6	14	32.6	16.3	44	39.8	17.6
Fourth	26	47.2	14.3	19	46.5	16.6	4	32.0	7.5	49	45.7	15.4
Fifth	23	45.8	12.5	11	36.7	12.6	2	30.5	30.3	36	42.2	13.2
Sixth	21	53.5	13.2	4	39.0	5.1	--	----	----	25	51.2	13.4

Table 5

Grade Level Equivalents For the Four Subgroups of English Dominants' CTBS Mean Raw Scores By Grade

Grade	EDH		EDB		EDNA		EDA		Total	
	XRS	GE	XRS	GE	XRS	GE	XRS	GE	XRS	GE
Third	39.4	3.2	47.1	3.6	49.2	3.7	57.8	4.2	43.2	3.4
Fourth	37.0	3.0	42.3	3.4	54.2	4.0	59.7	4.3	41.7	3.4
Fifth	33.1	3.8	36.1	4.1	43.7	5.0	54.0	5.9	36.2	4.1
Sixth	38.0	4.3	45.4	5.1	41.0	4.7	52.5	5.8	40.9	4.7

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Table 6

Grade Level Equivalents For the Three Subgroups
of Spanish Dominants' CTBS Mean Raw Scores
By Grade

Grade	SD-I		SD-II		SD-III		Total	
	XRS	GE	XRS	GE	XRS	GE	XRS	GE
Third	51.0	3.8	37.8	3.2	32.6	2.8	39.8	3.3
Fourth	47.2	3.6	46.5	3.6	32.0	2.8	45.7	3.6
Fifth	45.8	5.2	36.7	4.3	30.5	3.6	42.2	4.8
Sixth	53.5	5.9	39.0	4.4	----	---	51.2	5.6

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Table 7

T-Test Results Comparing English Dominant Subgroups With SD-I Subgroup Controlled for Grade

Grade	EDH/SD-I	EDB/SD-I	EDA/SD-I	EDNA/SD-I
Third	-2.58*	-0.64	0.67	-0.25
Fourth	-2.59*	-0.82	1.37	-0.98
Fifth	-3.45**	-1.65	1.01	-0.28
Sixth	-3.60**	-1.10	-0.10	-1.31

*p is less than .05
**p is less than .01

state identified gifted cases (SD-Ia) were computed. T-test results comparing the SD-Ia subgroup to the ED subgroups have been presented in Table 9. No significant differences between any groups were found subsequent to this analysis.

Analysis of the Introduction to Dual Reading Following the Acquisition of Decoding Skills in Spanish

A difference of the means test (T-test) was again computed to determine the significance between the mean raw scores of the four subgroups of English dominant pupils and subgroups SD-II and SD-III of the Spanish dominants. These results have been presented in Tables 10, 11, 12, and 13, respectively. Significant differences were found at the third grade level between ED Blacks and SD-III (p is less than .05), and among ED Asians and SD-II and SD-III (p is less than .01). At the fourth grade level, significant differences were found between ED Hispanics and SD-II (p is less than .05) and between ED Native Americans and SD-III (p is less than .05). No significant differences were encountered at the fifth or sixth grade levels.

Interestingly enough, however, a difference of the means test (T-test) computed for mean raw scores of the total English dominant sample (EDH + EDB + EDA + EDNA) and the total Spanish dominant sample (SD-I + SD-II + SD-III)

Table 8

Summary Statistics for the Subgroup of Spanish Dominant I's Less Those Cases of Identified Gifted (SD-Ia) By Grade

Grade	N	X	S
Third	8	46.9	13.1
Fourth	15	39.7	10.8
Fifth	15	39.9	9.8
Sixth	14	46.4	10.1

Table 9

T-Test Results Comparing English Dominant Subgroups With SD-Ia Subgroup Controlled for Grade

Grade	EDH/SD-Ia	EDB/SD-Ia	EDA/SD-Ia	EDNA/SD-Ia
Third	-1.30	0.03	1.58	0.33
Fourth	-0.63	0.45	2.94*	2.31*
Fifth	-1.68	-0.44	2.09	0.79
Sixth	-2.01	-0.14	0.68	-0.74

*p is less than .05

Table 10

T-Test Results Comparing English Dominant Hispanic Subgroup With Two Subgroups of Spanish Dominants Controlled for Grade

Grade	EDH/SD-II	EDH/SD-III
Third	0.35	1.38
Fourth	-2.08*	0.68
Fifth	-0.86	0.28
Sixth	-0.15	----

*p is less than .05

Table 11

T-Test Results Comparing English Dominant Black Subgroup With Two Subgroups of Spanish Dominants Controlled for Grade

Grade	EDB/SD-II	EDB/SD-III
Third	1.48	2.27*
Fourth	-0.60	1.15
Fifth	-0.09	0.36
Sixth	0.57	----

*p is less than .05

Table 12

T-Test Results Comparing English Dominant Native American Subgroup With Two Subgroups of Spanish Dominants Controlled for Grade

Grade	EDNA/SD-II	EDNA/SD-III
Third	1.37	2.10
Fourth	0.94	2.57*
Fifth	0.90	0.77
Sixth	0.47	----

*p is less than .05

Table 13

T-Test Results Comparing English Dominant Asian Subgroup With Two Subgroups of Spanish Dominants Controlled for Grade

Grade	EDA/SD-II	EDA/SD-III
Third	3.15**	3.81**
Fourth	1.24	1.06
Fifth	1.90	1.09
Sixth	1.20	----

**p is less than .01

did reveal a significant difference at the sixth grade level (p is less than .05) as indicated in Table 14. The absence of SD-III's at the sixth grade level was a factor contributing to this significant difference.

Test Bias as a Function of Language Dominancy and Ethnicity

Chi square results comparing all subgroups' reading scores in relation to the median score for grades three, four, five, and six have been presented in Tables 15, 16, 17, and 18, respectively. At the third grade level, a relationship between language dominancy as a function of ethnicity was indicated by a chi square of 12.33 (p is less than .06). Similarly, a slight relationship was indicated at the fourth grade level (p is less than .10). No other significant results were found.

A chi square comparison of total English dominant subgroups with total Spanish dominant subgroups by grade provided additional information (Tables 19, 20, 21, and 22). At the third grade level a minimal relationship in favor of the English dominants was found to exist between ED-Total and SD-Total (p is less than .10). However, by the fourth grade, the minimal relationship favored the Spanish dominants (p is less than .10). At the fifth grade, there was no significance, but a relationship of

Table 14

T-Test Results Comparing Total English Dominant Students With Total Spanish Dominant Students Controlled for Grade

Grade	ED/SD
Third	1.02
Fourth	-1.49
Fifth	-1.81
Sixth	-2.48*

*p is less than .05

Table 15

Chi Square Results Comparing All Subgroups of Third Graders and Their Reading Scores In Relation to the Median

	EDH	EDB	EDNA	EDA	SD-I	SD-II	SD-III	Total
Md + or +	16	7	4	3	8	7	3	48
Md -	16	2	1	1	4	11	11	46
	32	9	5	4	12	18	14	N=94

$X^2 = 12.33$
df = 6
p is less than .06

Table 16

Chi Square Results Comparing All Subgroups of Fourth Graders and Their Reading Scores in Relation to the Median

	EDH	EDB	EDNA	EDA	SD-I	SD-II	SD-III	Total
Md + or =	6	4	3	2	16	10	1	42
Md -	20	4	2	1	10	9	3	49
	26	8	5	3	26	19	4	N=91

$X^2 = 10.02$
df = 6
p is less than .10

Table 17

Chi Square Results Comparing All Subgroups of Fifth Graders and Their Reading Scores in Relation to the Median

	EDH	EDB	EDNA	EDA	SD-I	SD-II	SD-III	Total
Md + or =	6	2	1	2	13	3	1	28
Md -	17	5	2	1	10	8	1	44
	23	7	3	3	23	11	2	N=72

$X^2 = 6.56$
df = 6
N. S.

Table 18

Chi Square Results Comparing All Subgroups of Sixth Graders and Their Reading Scores In Relation to the Median

	EDH	EDB	EDNA	EDA	SD-I	SD-II	Total
Md + or =	5	3	1	1	16	2	28
Md -	11	2	1	1	5	2	22
	16	5	2	2	21	4	N=50

$X^2 = 7.6$
df = 5
N. S.

Table 19

Chi Square Results Comparing the Total English Dominants and the Total Spanish Dominants and Their Third Grade Reading Scores In Relation to the Median

	ED	SD	Total
Md + or =	30	18	48
Md -	20	26	46
	50	44	N=94

$X^2 = 3.41$
df = 1
p is less than .10

Table 20

Chi Square Results Comparing the Total English Dominants and the Total Spanish Dominants and Their Fourth Grade Reading Scores In Relation to the Median

	ED	SD	Total
Md + or =	15	27	42
Md -	27	22	49
	42	49	N=91

$X^2 = 3.42$
df = 1
p is less than .10

Table 21

Chi Square Results Comparing the Total English Dominants and the Total Spanish Dominants And Their Fifth Grade Reading Scores In Relation to the Median

	ED	SD	Total
Md + or =	11	16	27
Md -	25	18	43
	36	34	N=70

$X^2 = 2.01$
df = 1
N. S.

Table 22

Chi Square Results Comparing the Total English Dominants and the Total Spanish Dominants And Their Sixth Grade Reading Scores In Relation to the Median

	ED	SD	Total
Md + or =	10	18	28
Md -	15	7	22
	25	25	N=50

$X^2 = 5.19$
df = 1
p is less than .05

probability of less than .05 was indicated in favor of the Spanish dominant total sample by the sixth grade.

Summary

In summary, the following general statements can be made with respect to the findings of the study:

1. Reading achievement of the SD-I sample was superior to the reading achievement of the ED-Hispanic group at every grade level. Reading achievement among the SD-I and all other ED subgroups was statistically equal.

2. Isolation of the gifted students from the SD-I sample (SD-Ia) resulted in significant differences among the mean scores only at the fourth grade level when the SD-Ia subgroup was compared with the ED-Asians and the ED-Native Americans.

3. The reading achievement of the four English dominant subgroups was statistically equal to that of the SD-II subgroup at all grade levels with the exception of the third and fourth grades. A comparison of the ED-Asians with the SD-II subgroup in the third grade demonstrated the superior reading achievement of the ED-Asian subgroup; and a comparison of the ED-Hispanic subgroup and the SD-II subgroup at the fourth grade indicated statistically superior reading achievement among the SD-II's.

4. Similarly, the only differences in reading achieve-

ment among the ED-subgroups and the SD-III subgroup occurred in grades three and four. At the third grade level both the ED-Black and ED-Asian subgroups demonstrated statistically superior reading achievement compared to the SD-III's, whereas only the ED-Native Americans indicated statistically better reading achievement than the SD-III's in the fourth grade.

5. Total ED versus total SD comparisons yielded no differences at grades three, four, and five. However, by grade six, the total Spanish dominant sample demonstrated statistically greater achievement in reading.

6. A Chi square analysis of all subgroups' mean raw scores in relation to the median yielded statistically significant results only in grades three and four. Therefore, only a minimum relationship between language dominancy as a function of ethnicity and high scores on the CTBS was indicated.

7. Chi square analysis of the total English dominants and the total Spanish dominants indicated an advantage for the English dominant group on the CTBS at the third grade level. Further Chi Square analyses of the dominancy as a function of ethnicity variables in relation to high achievement on the CTBS for grades four, five, and six indicated a minimal advantage (p less than .10) at the fourth grade increasing to an advantage (p less than .05) at the sixth grade.

Chapter 5

SUMMARY AND CONCLUSIONS

Since the inception of the ESEA Title VII Bilingual Program in Los Angeles in 1970, experience and research have pointed the way to new methodology focussed on the initial introduction of English reading skills to Spanish dominant bilinguals. The methodology used originally in the program was unsophisticated and untested. Language proficiency in English was the major criterion used to determine whether or not a child would begin reading in English; Spanish reading proficiency was only a secondary consideration. After a few years of experience and evaluation, the program's criteria for the introduction of second language literacy skills in English were refined. At the present time, a child is required to demonstrate proficiency in spoken English as well as proficiency in decoding Spanish.

Another problem developed in the area of program evaluation. Students' achievement was consistently measured by the Comprehensive Tests of Basic Skills, an instrument normed on a largely English speaking population. Many critics hypothesized that language minority children

were not able to fully demonstrate their skills in English reading on such an instrument.

In light of current research, these program developments and practices resulted in the formulation of the following research hypotheses:

1. Would Spanish dominant bilingual/bicultural children who began a dual reading program in the first grade demonstrate higher reading achievement in English than their English dominant peers who began reading English in the first grade?

2. Would Spanish dominant bilingual/bicultural children who demonstrated mastery of decoding skills in Spanish prior to the acquisition of reading skills in English achieve higher reading scores than their English dominant peers?

3. Is there a relationship between a child's language dominancy and ethnicity and his reading achievement as measured by the CTBS?

This chapter will review the findings presented in the previous chapter in relation to the hypotheses stated here. Moreover, conclusions and recommendations based on the results of the study will be made.

Hypothesis 1

Would Spanish dominant bilingual/bicultural children

who began a dual reading program in the first grade demonstrate higher reading achievement than their English dominant peers who began English reading in the first grade?

Based on the findings, the hypothesis of no difference must be rejected for the ED-Hispanic and SD-I subgroups; in all other cases the null hypothesis was upheld. Rejection of the null hypothesis in this study indicated the possible advantage in teaching Spanish and English reading skills to Spanish dominant bilingual/bicultural first graders. It must be emphasized, however, that no differences were found among the other ED subgroups and the SD-I subgroup. These results indicated that although no advantage was necessarily implied, there was also no apparent disadvantage for the Spanish dominants. Furthermore, analysis of the data after the gifted children were removed from the SD-I subgroup (forming subgroup SD-Ia) revealed a substantiation of the null hypothesis in nearly every case. Again, these results indicated that no advantage or disadvantage was necessarily apparent.

Hypothesis 2

Would Spanish dominant bilingual/bicultural children who demonstrated mastery of decoding skills in Spanish prior to the acquisition of reading skills in English

achieve higher reading scores than their English dominant peers?

Analysis of the data indicated insufficient evidence to reject the null hypothesis for all cases. However, the hypothesis of no difference was rejected in the following instances:

At the third grade level

1. When comparing the ED-Blacks with the SD-III subgroup (T-score 2.27, p less than .05), and

2. When comparing the ED-Asian subgroups with both the SD-II subgroup (T-score 3.15, p less than .01) and with the SD-III subgroup (T-score 3.81, p less than .01).

At the fourth grade level

1. When comparing the ED-Hispanics with the SD-II subgroup (T-score -2.08, p less than .05), and

2. When comparing the ED-Native Americans with the SD-III subgroup (T-score 2.57, p less than .05).

Rejection of the null hypothesis for the SD-III subgroup at grades three and four was not unexpected, since children in that sample had only been reading in English for a period of one or two years, respectively. Many first and second year readers of English would still be at the decoding level in English reading. Lessons would still be primarily in the areas of phonics and structural analysis. Level 1 of the CTBS, the instrument used for third and

fourth graders was composed of two subtests: reading vocabulary and reading comprehension. Children who were still at the decoding level rather than comprehension level of skills probably would not have performed well in reading on Level 1 of the CTBS.

Furthermore, significant differences occurring among the ED-Native Americans, the ED-Asians, and the SD-III subgroup must be interpreted with caution because of the small sample sizes (refer to Tables 3 and 4). Although statistically significant differences were found among these groups, sometimes they were based on samples as small as two individuals. Obviously, it is not fair to make generalizations based on such small groups.

Finally, all significant differences disappeared by the fifth and sixth grades; a fact which indicated that the Spanish dominant subgroups were increasing their English reading skills at a faster rate than the ED subgroups. In other words, in four years (from second through fifth grade) Spanish dominant children who were introduced to English reading in the second grade were able to attain the same level of success in English reading that their English dominant peers had taken six years to achieve (kindergarten through fifth grade). Similarly, Spanish dominant children introduced to English reading in the third grade demonstrated English reading ability equal to that of their English dominant peers after only three

years of reading instruction in English compared to the English dominants' six year period of instruction.

Hypothesis 3

Is there a relationship between a child's language dominancy and ethnicity and his reading achievement as measured by the CTBS?

Results of the Chi Square analyses of the data comparing all subgroups of English and Spanish dominant learners provided insufficient evidence to reject the null hypothesis. Although minimal relationships were demonstrated, the level of probability was not high enough to warrant rejection of the hypothesis of no difference. Similarly, significant differences were not found in grades three, four, and five when total English dominant subgroups were compared to total Spanish dominant subgroups. At the sixth grade level, however, the data was sufficient to reject the null hypothesis. The data suggested then, that there was a higher probability that Spanish dominant children rather than English dominants would score above the median on Level II of the CTBS. This outcome led to the conclusion that the CTBS is a valid instrument for evaluating the reading skills of Spanish dominant children who read English.

Implications and Recommendations

The data presented thus far have demonstrated the effectiveness of the bilingual program for teaching English reading skills to Spanish dominant bilinguals. It has been shown that bilinguals introduced to a dual reading program in the first grade performed at least as well and sometimes better than did their English speaking peers on tests of English reading. This outcome was unexpected in view of the research, yet predictable to some extent based on observation of students participating in the program. This evidence suggests that for some students, particularly those who demonstrate proficiency in Spanish and English from the time they begin school, a dual reading program may be a definite advantage. It is possible that for such children, a two hour dual reading program has positive transfer effects on English skills rather than the expected interference. In any event, further study is definitely recommended.

Secondly, Spanish dominants introduced to English reading following the acquisition of decoding skills in Spanish have demonstrated the ability to attain the same level of success on tests of English reading at a faster rate than their English dominant peers. With this evidence, future researchers can attempt to determine the minimum combination of skills necessary in decoding in

Spanish and oral proficiency in English in order to provide the learner with maximum success in English reading.

Finally, it has been shown that all children, regardless of their language dominancy or their ethnicity, had equal potential to perform well on the CTBS. This evidence was based, however, on children who had demonstrated oral proficiency in English and who were already in a reading program in English. Generalizations, therefore, can only be applied to similar samples. The findings of this study should not be interpreted to imply that the CTBS would be a fair instrument for the evaluation of English reading skills of non or limited English speaking students.

In addition to the conclusions stemming from the rejection of the null hypotheses, the results of this study have opened the door to new fields of research.

First of all, it is recommended that this study be repeated in order to control several factors which may have had a confounding effect on the outcomes. These factors include:

1. Language dominancy determination. Since the assignment to language dominancy groups was based solely upon the joint assessment of teachers and instructional aides, there is the possibility that so-called bilinguals may have been initially assigned to the wrong group. As a result, some of the Spanish dominant I sample, may actually have been English dominant Hispanics. Similarly,

there is the possibility that some of the English dominant Hispanics may have been covert bilinguals; that is, children of Hispanic background who for a variety of reasons including language status, self-concept, peer pressure, etc., concealed their Spanish speaking ability. If this were the case, these English dominant Hispanics may actually have learned to read in their weaker language (English), a fact which could have accounted for lower reading achievement.

2. Entry level skills. As pointed out earlier, there existed a large proportion of gifted children among the SD-I's. Because of the procedure used to assign children to the different subgroups, this circumstance could not have been avoided in this study. However, future studies should pretest all potential subjects for entry level skills and then randomly assign them within the appropriate language dominancy groups to the treatment groups, i.e., dual reading in first grade, second language literacy after decoding is learned in the primary language, etc. Furthermore, the presence of such a high number of state identified gifted children (up to 66% of the sixth graders) within the SD-I subgroup suggests the possibility for future study in order to determine whether or not their presence was just mere coincidence.

Secondly, it would be highly desirable to compare the special treatment groups; those participating in a bilin-

gual program to groups of children of similar linguistic, ethnic, and socio-economic backgrounds who were not participating in a bilingual program. Such a comparison would provide even greater information regarding the effectiveness of bilingual programs, since the achievement of Spanish and English dominants in traditional programs could be contrasted with the achievement of those in a bilingual program.

Thirdly, valuable information would be gained by following the progress of Spanish dominant children who leave bilingual programs to go to traditional programs. Frequently, the children who leave the bilingual program are those who are demonstrating the greatest success in English reading. Teachers and/or administrators willingly transfer successful students out of the bilingual program in order to meet the needs of other non-English or limited English speaking students in the school. The effect of this procedure is to artificially lower the demonstrable achievement of the bilingual program, since the children who are finally experiencing success in English leave the program and those who remain only have limited skills in English. By following those who transfer out, the achievement of bilingual/biliterate students could be compared not only to their peers in the traditional program, but also to Spanish dominants who remain in a bilingual program's dual reading program.

In addition, such a follow-through or longitudinal study would enable the researcher to determine whether or not the SD-II and SD-III subgroups actually maintain the elevated rate of acquisition of reading skills demonstrated in the present study. Indeed, if the rate is maintained, SD-II's and SD-III's would eventually surpass the achievement level of the English dominants. On the other hand, a follow through study might demonstrate that the elevated rate occurs only in the initial stages of English reading acquisition and that the rate of progress levels off after reaching a minimal skill level.

Finally, future research would benefit by a delineation of the Spanish dominant subgroups into Mexicanos, those recent arrivals from Mexico, and Chicanos, children born in this country whose primary language is either Spanish or English. Such a separation would enable the researcher to ascertain whetner differential effects are obtained by either of these subgroups.

Bilingual programs make a difference for the linguistically different child, but changes do not occur overnight. Researchers must be granted the opportunity to measure accurately the success of the programs. Research requires time to carry out an objective study, and the ability to control interfering or confounding factors. School districts and government agencies interested in collecting reliable and valid data must also be willing to

allow controlled longitudinal studies to take place in the classroom. More importantly, funding agencies should insist on quality evaluations of programs in order to improve and refine the methodology constantly.

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Appendix A

ENGLISH DOMINANT RAW DATA

English Dominant Hispanics

PUPIL NUMBER	BD	3RS	3GE	4RS	4GE	5RS	5GE	6RS	6GE
1	9-69	47	3.6	--	---	--	---	--	---
2	12-68	51	3.8	--	---	--	---	--	---
3	4-69	54	4.0	--	---	--	---	--	---
4	6-69	19	1.8	--	---	--	---	--	---
5	3-69	48	3.7	--	---	--	---	--	---
6	2-69	57	4.2	--	---	--	---	--	---
7	4-69	56	4.1	--	---	--	---	--	---
8	12-68	43	3.4	--	---	--	---	--	---
9(G)	1-69	64	4.6	--	---	--	---	--	---
10	10-69	41	3.3	--	---	--	---	--	---
11	8-68	23	2.0	30	2.6	--	---	--	---
12	10-68	14	1.6	27	2.3	--	---	--	---
13	12-68	22	2.0	36	3.0	--	---	--	---
14	1-68	21	1.9	--	---	--	---	--	---
15	3-68	35	3.0	38	3.2	--	---	--	---
16	6-68	14	1.6	--	---	--	---	--	---
17	8-68	33	2.8	26	2.2	--	---	--	---
18	8-68	33	2.8	--	---	--	---	--	---

English Dominant Hispanics
(continued)

PUPIL NUMBER	BD	3RS	3GE	4RS	4GE	5RS	5GE	6RS	6GE
19	7-67	43	3.4	47	3.6	36	4.1	--	---
20	9-67	73	5.9	73	5.9	--	---	--	---
21	12-66	36	3.0	60	4.3	33	3.8	--	---
22	11-66	29	2.5	32	2.8	17	2.0	--	---
23	2-67	33	2.8	56	4.1	42	4.8	--	---
24	9-67	33	2.8	27	2.3	22	2.6	--	---
25	8-66	39	3.2	47	3.6	50	5.6	41	4.7
26	2-66	41	3.3	--	---	41	4.7	38	4.3
27	1-66	26	2.2	33	2.8	26	3.1	28	3.3
28	1-66	41	3.3	--	---	52	5.7	57	6.2
29	7-66	61	4.4	36	3.0	25	3.0	28	3.3
30	12-65	65	4.7	73	5.9	54	5.9	--	---
31	7-66	43	3.4	--	---	38	4.3	30	3.5
32	7-66	--	---	36	3.0	34	3.9	30	3.5
33	2-66	36	3.0	27	2.3	25	2.9	29	3.4
34	8-66	26	2.2	17	1.7	15	1.8	35	4.0
35	7-65	--	---	35	3.7	49	5.5	52	5.7
36	4-65	--	---	35	3.7	36	4.1	39	4.4
37	12-64	--	---	21	2.5	23	2.8	23	2.8
38	7-65	--	---	25	2.9	30	3.5	--	---
39	12-64	--	---	31	3.4	30	3.5	18	2.1
40	7-65	--	---	36	3.8	23	2.8	53	5.8
41	10-65	--	---	34	3.6	26	3.1	37	4.3
42	3-65	--	---	45	4.4	51	5.6	64	7.1
43	9-65	--	---	25	2.9	30	3.5	47	5.3

English Dominant Black Americans

PUPIL NUMBER	BD	3RS	3GE	4RS	4GE	5RS	5GE	6RS	6GE
44	5-69	54	4.0	--	---	--	---	--	---
45	12-68	71	5.5	--	---	--	---	--	---
46	9-68	26	2.2	--	---	--	---	--	---
47	10-68	31	2.7	35	3.0	--	---	--	---
48	1-68	49	3.7	20	1.9	--	---	--	---
49	12-66	53	3.9	54	4.0	44	5.0	--	---
50	7-67	46	3.6	28	2.4	26	3.1	--	---
51	7-66	53	3.9	73	5.9	74	9.1	74	9.1
52	8-66	41	3.3	49	3.7	27	3.2	45	5.1
53	1-66	--	---	--	---	21	2.4	13	1.7
54	11-65	--	---	53	5.1	37	4.3	61	6.7
55	6-65	--	---	26	3.0	24	2.9	34	3.9

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English Dominant Native Americans

PUPIL NUMBER	BD	3RS	3GE	4RS	4GE	5RS	5GE	6RS	6GE
56	10-69	33	2.8	--	---	--	---	--	---
57	3-68	66	4.8	65	4.7	--	---	--	---
58	4-68	51	3.8	--	---	--	---	--	---
59	8-68	44	3.5	57	4.2	--	---	--	---
60	2-67	52	3.9	76	6.7	54	5.9	--	---
61	5-65	--	---	33	3.6	34	3.9	37	4.3
62	7-65	--	---	40	3.1	40	4.5	45	5.1

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English Dominant Asian Americans

PUPIL NUMBER	BD	3RS	3GE	4RS	4GE	5RS	5GE	6RS	6GE
63	12-67	75	6.3	77	7.0	--	---	--	---
64	9-67	60	4.3	73	5.9	62	6.8	--	---
65	2-66	26	2.2	29	2.5	27	3.2	28	3.3
66	6-66	70	5.4	--	---	73	8.7	77	10.0

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English Dominant Anglo Americans

PUPIL NUMBER	BD	3RS	3GE	4RS	4GE	5RS	5GE	6RS	6GE
67	11-65	--	---	41	4.1	46	5.2	57	6.2

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Appendix B

SPANISH DOMINANT RAW DATA

Spanish Dominant I

PUPIL NUMBER	BD	3RS	3GE	4RS	4GE	5RS	5GE	6RS	6GE
S1	10-67	23	2.0	37	3.8	--	---	--	---
S2(G)	10-66	65	4.7	81	8.8	--	---	--	---
S3(G)	10-66	40	3.3	59	4.3	--	---	--	---
S4	3-66	57	4.2	45	3.5	36	4.1	--	---
S5	8-66	68	5.1	50	3.8	--	---	--	---
S6(G)	3-66	66	4.8	75	6.3	69	7.9	--	---
S7	12-65	43	3.4	47	3.6	--	---	--	---
S8(G)	7-66	66	4.8	72	5.7	57	6.2	71	8.3
S9	11-65	--	---	--	---	31	3.6	32	3.7
S10	7-66	37	3.1	55	4.0	37	4.3	40	4.5
S11	7-66	36	3.0	45	3.5	58	6.3	58	6.3
S12	5-66	66	4.8	63	4.5	57	6.2	65	7.2
S13	5-66	45	3.5	--	---	41	4.7	56	6.1
S14	1-65	--	---	27	3.1	25	3.0	38	4.3
S15	4-65	--	---	37	3.8	36	4.1	43	4.9
S16	9-65	--	---	35	3.7	45	5.1	46	5.2
S17(G)	10-65	--	---	52	5.0	63	6.9	70	8.1
S18(G)	10-65	--	---	52	5.0	49	5.5	71	8.3

Spanish Dominant I
(continued)

PUPIL NUMBER	BD	3RS	3GE	4RS	4GE	5RS	5GE	6RS	6GE
S19(G)	12-65	--	---	52	5.0	66	7.4	72	8.5
S20	7-65	--	---	26	3.0	39	4.4	45	5.1
S21	3-65	--	---	37	3.8	39	4.4	61	6.7
S22	6-65	--	---	36	3.8	42	4.8	48	5.4
S23	9-65	--	---	31	3.4	27	3.2	44	5.0
S24	1-65	--	---	29	3.3	35	4.0	40	4.5
S25(G)	9-65	--	---	51	4.9	55	6.0	68	7.7
S26	9-65	--	---	33	3.6	35	4.0	34	3.9
S27(G)	1-65	--	---	50	4.8	53	5.8	64	7.1
S28	3-65	--	---	50	4.8	58	6.3	54	5.9

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Spanish Dominant II

PUPIL NUMBER	BD	3RS	3GE	4RS	4GE	5RS	5GE	6RS	6GE
S29	10-69	44	3.5	--	---	--	---	--	---
S30	8-68	36	3.0	31	3.4	--	---	--	---
S31	8-68	31	2.7	50	4.8	--	---	--	---
S32	8-68	39	3.2	39	3.2	--	---	--	---
S33	9-68	52	3.9	60	4.3	--	---	--	---
S34	7-68	23	2.0	35	3.7	--	---	--	---
S35	6-68	73	5.9	77	7.0	--	---	--	---
S36	7-68	12	1.4	29	3.3	--	---	--	---
S37	8-68	15	1.6	50	4.8	--	---	--	---
S38	2-67	27	2.3	39	3.2	30	3.5	--	---
S39	6-67	57	4.2	76	6.7	61	6.7	--	---
S40	1-67	61	4.4	62	4.5	54	5.9	--	---
S41	3-67	33	2.8	53	3.9	50	5.6	--	---
S42	6-67	37	3.1	52	3.9	32	3.7	--	---
S43	9-67	52	3.9	47	3.6	37	4.3	--	---
S44	5-67	23	2.0	28	2.4	20	2.3	--	---
S45(G)	12-68	49	3.7	68	5.1	--	---	--	---
S46	9-66	17	1.7	--	---	21	2.4	31	3.6
S47	3-65	--	---	36	3.8	31	3.6	38	4.3
S48	3-65	--	---	16	1.8	30	3.5	43	4.9
S49	8-65	--	---	38	3.9	38	4.3	44	5.0

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Spanish Dominant III

PUPIL NUMBER	BD	3RS	3GE	4RS	4GE	5RS	5GE	6RS	6GE
S50	3-69	28	2.4	--	---	--	---	--	---
S51	2-69	48	3.7	--	---	--	---	--	---
S52	7-69	31	2.7	--	---	--	---	--	---
S53	5-69	37	3.1	--	---	--	---	--	---
S54	11-69	35	3.0	--	---	--	---	--	---
S55(G)	12-68	65	4.7	--	---	--	---	--	---
S56	7-69	36	3.0	--	---	--	---	--	---
S57	12-68	24	2.1	--	---	--	---	--	---
S58	7-69	61	4.4	--	---	--	---	--	---
S59	10-68	8	1.0	28	2.4	--	---	--	---
S60	11-69	11	1.3	--	---	--	---	--	---
S61	7-68	23	2.0	--	---	--	---	--	---
S62	6-68	15	1.6	44	3.5	--	---	--	---
S63	4-67	--	---	24	2.1	25	3.0	--	---
S64	3-67	34	2.9	32	2.8	36	4.1	--	---

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